

The compound set forth above is specifically disclosed in the patent application as compound 6(a) in Scheme 2 on page 31 and as compound 6(a) on page 47. Transition metal complexes that include this diazaphosphacycle are also set forth in the application.

## REMARKS

### A. Review of Restriction Requirement

In the Office Action, a restriction requirement was imposed under 35 U.S.C. § 121 between the claims of Groups I, II, III, IV, V, VI, VII, and VIII described in greater detail below:

I. Claims 1-17 and 19-23, drawn to a method for "synthesizing a diazaphosphacycle", classified variously in class 564, subclass 16; class 423, subclass 407.

II. Claims 24, 29-32, 37-39 and 44-47, drawn to a product described as a "diazaphosphacycle" compound, classified variously in class 564, subclass 16.

III. Claims 25-27, 33-35, 40-42 and 48-50, drawn to a product described as a "transition metal complex", classified variously in class 585, subclass 275, subclass 277.

IV. Claims 28, 36, and 43, drawn to a method of using metal complexes, classified variously in class 585, subclass 277; class 518, subclass 726.

V. Claim 51, drawn to a product described as a "combinatorial library of diazaphosphacycles", classified variously in class 435, subclass 6, DIG 34.

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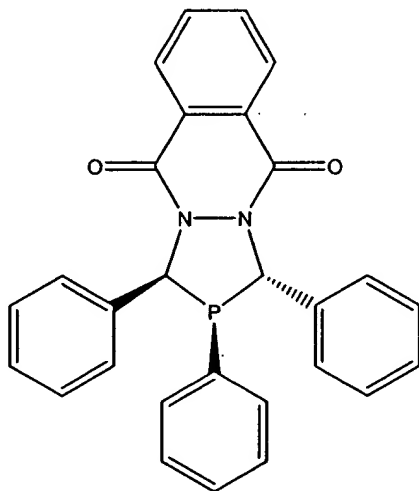
VI. Claim 52, drawn to a product described as a "combinatorial library of transition metal complexes", classified variously in class 435, subclass 6, DIG 30.

VII. Claims 53-54, drawn to a method of "synthesizing a diazaphosphacycle transition metal complex", classified variously in class 558, subclass 321.

VIII. Claim 18, drawn to a method for synthesizing a library of diazaphosphacycles, classified variously in class 435, subclass 6, DIG 46.

#### B. Election of Claims and Species and Introduction

As noted above, Applicants hereby provisionally elect the claims and compounds of Group II (claims 24, 29-32, 37-39 and 44-47) for prosecution with traverse. The Examiner required that a species be elected for prosecution. Therefore, Applicants provisionally elect the species with the structure shown below which corresponds to compound 6(a). The elected species is specifically disclosed in Scheme 2, and in the Examples section. A rhodium complex that includes the diazaphosphacycle ligand is also shown in the Examples and the X-ray structure of the transition metal complex is shown in FIG. 15.



The claims of Group II that read on the elected species include claims 24, 29, 31, 32, 39, and 45.

According to § 803 of the MPEP, two criteria must be met for any restriction requirement to be proper. First, the inventions must be independent or distinct as claimed. Second, there must be a serious burden on the Examiner. As

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stated in § 803 of the MPEP, "If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to independent or distinct inventions."

Applicants understand and appreciate the Examiner's time constraints in examining applications. However, for the reasons presented below, Applicants respectfully contend that the search and examination of each of the claims of Groups I, II, III, IV, V, VI, VII, and VIII should be possible without imposing a serious burden upon the Examiner.

Applicants first note that the only three independent claims of the 54 pending claims are independent method claims 1 and 20 of Group I and independent compound claim 24 of Group II. Applicants respectfully note that if the diazaphosphacycle recited by independent claim 24 is found to be novel and non-obvious, then all the claims that depend from it and thus include the diazaphosphacycle will also be novel and non-obvious. Applicants initially note that each of dependent claims 25-54 of Groups II, III, IV, V, VI, and VII depend from independent claim 24. Therefore, if independent claim 24 is searched and found to be novel and non-obvious, then each of the claims that depends from it should be rejoined with and allowed in this application.

Applicants also respectfully direct the Examiner's attention to § 821.04 of the M.P.E.P. which states, with respect to rejoinder,

However, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.

Where the application as originally filed discloses the product and the process for making and/or using the product, and only claims directed to the product are presented for examination, when a product claim is found allowable, applicant may present claims directed to the process of making and/or using the patentable product by way of amendment pursuant to 37 C.F.R. 1.121. In view of the rejoinder procedure, and in order to expedite prosecution, applicants are encouraged to present such process claims, preferably as dependent claims, in the

application at an early stage of prosecution. Process claims which depend from or otherwise include all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance.

(Emphasis added)

Because each of claims 25-54 depends from independent product claim 24 of Group II and includes each of the limitations of independent claim 24, Applicants respectfully submit that dependent claims 25-27, 33-35, 40-42 and 48-50 of Group III, dependent claims 28, 36, and 43 of Group IV, dependent claim 51 of Group V, dependent claim 52 of Group VI, and dependent claims 53 and 54 of Group VII must be rejoined with the claims of Group II if the compound of claim 24 should be found allowable.

**C. Groups II and III Should be Examined Together**

Applicants first direct the Examiner's attention to the claims of elected Group II (independent claim 24, and dependent claims 29-32, 37-39 and 44-47) and Group III (dependent claims 25-27, 33-35, 40-42 and 48-50). Each of the dependent claims of Group II and Group III depend directly or indirectly from independent claim 24. Therefore, should the diazaphosphacycle of claim 24 be determined to be novel and non-obvious, then each of the claims of Groups II and III should also be novel and non-obvious. Independent claim 24 of Group II is directed to a diazaphosphacycle, comprising a compound of formula III and salts of the compound.

Dependent claim 25 of Group III depends directly from independent claim 24 of Group II and is directed to a transition metal complex that comprises the diazaphosphacycle of claim 24. Therefore, a patentability search of the transition metal complex of claim 25 must include a search for the diazaphosphacycle of claim 24. Dependent claims 26 and 27 of Group II each depend from claim 25 thus including each and every element of dependent claim 25. While dependent claim 25 includes a transition metal, it also includes each and every element of claim 24. Therefore, a search directed to claim 24 of Group II should be largely, if not completely, coextensive with a search directed to the transition metal complexes of claims 25-27 of Group III. For this reason, Applicants submit that claims 24 and 25-27 of Groups II and III can and

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should be examined together without placing an additional undue burden on the Examiner.

Dependent claim 31 of Group II depends indirectly from independent claim 24 of Group II through dependent claim 29 of Group II. Each of claims 24, 29, and 31 reads on the elected species as noted above. Dependent claim 29 specifies that "n is 0" and dependent claim 31 specifies that "R<sup>4</sup> is a -(C=O)-R<sup>6</sup> group and R<sup>5</sup> is a -(C=O)-R<sup>7</sup> group." Dependent claim 33 of Group III depends directly from dependent claim 31 of Group II, and dependent claims 34 and 35 depend directly from claim 33. Claim 33 is drawn to a transition metal complex that comprises the diazaphosphacycle of claim 31. Therefore, Applicants respectfully submit that a search directed to dependent claim 31 of Group II will substantially overlap with any search directed to claims 33-35 of Group III. Furthermore, should the diazaphosphacycle of dependent claim 31 be found to be novel and non-obvious, then the transition metal complex of claims 33-35 should also be novel and non-obvious because they include the diazaphosphacycle of claim 31.

Dependent claim 39 of Group II depends directly from independent claim 24 of Group II and reads on the elected species. Dependent claim 40 of Group III depends directly from dependent claim 39 of Group II, and dependent claims 41 and 42 depend directly from claim 40. Claim 40 is drawn to a transition metal complex that comprises the diazaphosphacycle of claim 39. Therefore, Applicants respectfully submit that a search directed to dependent claim 39 of Group II will substantially overlap with any search directed to claims 40-42 of Group III. Furthermore, should the diazaphosphacycle of dependent claim 39 be found to be novel and non-obvious, then the transition metal complex of claims 40-42 should also be novel and non-obvious because they include the diazaphosphacycle of claim 39.

Dependent claim 46 of Group II depends directly from independent claim 24 of Group II. Dependent claim 48 of Group III depends directly from dependent claim 46 of Group II, and dependent claims 49 and 50 depend directly from claim 48. Claim 48 is drawn to a transition metal complex that comprises the diazaphosphacycle of claim 46. Therefore, Applicants respectfully submit that a search directed to dependent claim 46 of Group II will substantially overlap with any search directed to claims 48-50 of

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Group III. Furthermore, should the diazaphosphacycle of dependent claim 46 be found to be novel and non-obvious, then the transition metal complex of claims 48-50 should also be novel and non-obvious because they include the diazaphosphacycle of claim 46.

Because each of the claims of Group III depend from independent claim 24 of Group II and include a diazaphosphacycle of Group II as a component, Applicants respectfully request that the claims of Group II and Group III be examined together and submit that this will not impose a substantial additional hardship on the Examiner.

**D. Groups II and V Should be Examined Together**

Applicants next direct the Examiner's attention to independent claim 24 of Group II and the only claim of Group V, claim 51. Claim 51 is directed to a combinatorial library comprising "a collection of different diazaphosphacycles according to claim 24." Applicants respectfully note that any search directed to the diazaphosphacycles of independent claim 24 of Group II must be coextensive and overlap with a search directed to the library of claim 51. For this reason, Applicants respectfully request that claim 51 of Group V be examined along with the claims of Group II and that this will not place any additional serious burden on the Examiner.

**E. Groups II and VI Should be Examined Together**

Applicants next direct the Examiner's attention to independent claim 24 of Group II, dependent claim 25 of Group III and the only claim of Group VI, claim 52. As noted above, the transition metal complex of dependent claim 25 includes the diazaphosphacycle of claim 24 and a transition metal and should be examined along with claim 24 of Group I. Claim 52 is directed to a combinatorial library comprising "a collection of different transition metal complexes according to claim 25." Applicants respectfully note that any search directed to the diazaphosphacycles of independent claim 24 of Group II must be substantially coextensive and overlap with a search directed to the transition metal complex of claim 25 of Group III and the library of claim 52 of Group VI. For this reason, Applicants respectfully request that claim 52 of Group VI be examined along with the claims of Groups II and III and that this will not place any additional serious burden on the Examiner.

**F. Groups II and IV Should be Examined Together**

Applicants next direct the Examiner's attention to independent claim 24 of Group II, dependent claims 25, 33 and 40 of Group III and claims 28, 36, and 43 of Group IV. As noted above, the transition metal complexes of dependent claims 25, 33 and 40 each include the diazaphosphacycle of claim 24 and a transition metal because they each depend from independent claim 24 and should be examined along with claim 24 of Group I. Claims 28, 36, and 43 are each directed to a method of catalyzing a chemical reaction that includes a transition metal complex that includes a diazaphosphacycle of claim 24. Therefore, Applicants respectfully note that any search directed to the diazaphosphacycles of independent claim 24 of Group II and the diazaphosphacycles of dependent claims 31 and 39 must be substantially coextensive and overlap with a search directed to the transition metal complexes of claims 25, 33, and 40 of Group III and the methods of claims 28, 36, and 43 of Group IV. For this reason, Applicants respectfully request that claims 28, 36, and 43 of Group IV be examined along with the claims of Groups II and III and that this should not place any additional serious burden on the Examiner.

**G. Groups II and VII Should be Examined Together**

Applicants next direct the Examiner's attention to independent claim 24 of Group II and the only claims of Group VII, claims 53 and 54. Claim 54 depends directly from claim 53 which is directed to a method of synthesizing a transition metal complex. The method of dependent claim 53 includes "reacting the diazaphosphacycle of claim 24 with a starting transition metal complex." Therefore, Applicants respectfully submit that if the diazaphosphacycle of independent claim 24 of Group II is found to be novel and non-obvious, then so is the method of claims 53 and 54 of Group VII which include the diazaphosphacycle of claim 24. Applicants respectfully note that any search directed to the method of claims 53 and 54 of Group VII must be substantially coextensive with and overlap any search directed to the diazaphosphacycles of independent claim 24 of Group II. For this reason, Applicants respectfully request that claims 53 and 54 of Group VII be examined along with the claims of Group II and that this will not place any additional serious burden on the Examiner.

**H. Groups I, II and VIII Should be Examined Together**

**a. Introduction**

Group I includes independent method claims 1 and 20 and dependent claims 2-17, 19 and 20-23. Group II includes diazaphosphacycle claims 24, 29-32, 37-39 and 44-47. As determined by Examiner Epperson, the claims of Group I are classified in class 564, subclass 16 and class 423, subclass 407. Notably, the claims of Group II are classified in class 564, subclass 16 or the exact class and subclass as the claims of Group I. Because the claims of Groups I and II have the same class and subclass, Applicants respectfully request that these claims be searched together as this should not impose any additional burden on the Examiner.

**b. Claims 2-10, 12, and 13 of Group I and Group II**

Applicants further note that a large number of the dependent claims of Group I (claims 3-10, 12, and 13) depend from claim 2. Claim 2 depends from method claim 1 and further specifies that the diazaphosphacycle has the formula III which is the same formula III of the diazaphosphacycle of the only independent claim (claim 24) of Group II. Therefore, Applicants respectfully contend that any search directed to the claims of Group II must include the diazaphosphacycle specified in claims 2-10, 12, and 13. Furthermore, should the diazaphosphacycle of claim 24 be found to be novel and non-obvious, then the methods of claims 2-10, 12 and 13 will also be novel and non-obvious. For these reasons, Applicants respectfully request that claims 2-10, 12, and 13 of Group I be searched and examined along with the claims of Group II, and note that this should not impose a serious additional burden on the Examiner.

The single claim of Group VIII, claim 18, depends from dependent claim 2 further specifying that a library of different diazaphosphacycles is produced using the method. Applicants respectfully submit that this claim should be examined along with dependent claim 2 of Group I, and therefore, along with independent claim 24 of Group II for the reasons presented above.



**c. Claims 21-23 of Group I and Group II**

Dependent claims 22 and 23 of Group I depend from dependent claim 21.

Claim 21 depends from method claim 20 and further specifies that the diazaphosphacycle has the formula VII or VIII. An analysis of the diazaphosphacycles of formula VII and VIII shows that both of these are encompassed by the diazaphosphacycle of formula III of the diazaphosphacycle of the only independent claim (claim 24) of Group II. Therefore, Applicants respectfully contend that any search directed to the claims of Group II will include the diazaphosphacycles of formula VII and VIII specified in claim 21-23. Furthermore, should the diazaphosphacycle of claim 24 be found to be novel and non-obvious, then the methods of claims 21-23 will also be novel and non-obvious. For these reasons, Applicants respectfully request that claims 21-23 of Group I be searched and examined along with the claims of Group II, and note that this should not impose a serious additional burden on the Examiner.

**CONCLUSION**

For the reasons presented above, Applicants respectfully request that the restriction requirement imposed between Groups II and III be reconsidered and withdrawn and that the claims of these groups be searched and examined together in their entirety as filed. For the reasons presented above, Applicants further and separately request that the restriction requirement imposed between the claims of Groups II and V; between the claims of Groups II and VII; between the claims of Groups II, III, and IV; between the claims of Groups II, III, and VI; and between the claims of Groups I, II, and VIII be reconsidered and withdrawn, and that claims 1-54 be examined together in their entirety as filed.

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FOLEY & LARDNER  
Customer Number: 23524  
**23524**

PATENT TRADEMARK OFFICE

Telephone: (608) 258-4281

Facsimile: (608) 258-4258

Respectfully submitted,

By 

Bernard P. Friedrichsen  
Attorney for Applicant  
Registration No. 44,689